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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,637	09/24/2003	Thomas E. Willis	42P8930XC	6840

7590

03/31/2006

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EXAMINER

PORTKA, GARY J

ART UNIT

PAPER NUMBER

2188

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/670,637

Applicant(s)

WILLIS ET AL.

Examiner

Gary J. Portka

Art Unit

2188

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-26 is/are allowed.
- 6) ☒ Claim(s) 1,2,5,13 and 14 is/are rejected.
- 7) ☒ Claim(s) 3,4,6-12,15 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/6/2006</u> | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 5 and 6 have been amended by Applicant. Claims 1-26 are pending.

#### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on February 6, 2006 were considered by the examiner.

#### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 13 are rejected under 35 U.S.C. 102(a) as being anticipated by Mohamed, EP 0 797 149 A2.
5. As to claims 1 and 13, Mohamed discloses a method and apparatus comprising means for maintaining state information for a plurality of logical processors (context information, see col. 5 lines 22-29 and col. 6 lines 15-24), and applying it to a set of predefined rules to determine whether they can share a virtual address translation (see Abstract, col. 6 line 56 to col. 8 line 6, where context information including select bits and matching circuitry determine if the process can share the translation).

6. Claims 1-2, 5, and 13-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Kakeda et al., US 6,.
7. As to claims 1 and 13, Kakeda discloses a method and apparatus comprising means for maintaining state information for a plurality of logical processors (process identifiers and global bits, Figs. 1- 5), and applying it to a set of predefined rules to determine whether they can share a virtual address translation (see Abstract, col. 5 lines 15-22 and 47-59, where global bits determine which part of the process identifiers are compared, these in conjunction thus determining whether the process can share the translation).
8. As to claims 2, 5, and 14, Kakeda discloses maintaining a plurality of page table addresses (addresses requested by CPU 3 are page table addresses as recited since they must access page table 40 if missed in the TLB, see col. 11 lines 11-15), and determining whether the logical processors can share a virtual address translation based on the addresses (the page table addresses may be properly considered to include all elements of the addresses included in the TLB entries, including process ids and global bits, since these must be submitted to the page table on a TLB miss, as there is only one table disclosed).

***Allowable Subject Matter***

9. Claims 17-26 are allowed.
10. Claims 3-4, 6-12, and 15-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Response to Arguments***

11. Applicant's arguments filed February 6, 2006 have been fully considered but they are not persuasive. Applicants have argued that the references do not teach a plurality of logical processors, and that a process must be differentiated from a processor. Examiner disagrees. Applicants own specification background states that in multithreading, multiple logical processors perform multiple tasks concurrently. The "logical processor or thread" may use virtual address translations, and these may be shared from one "logical processor or thread" to another. The background also states that a logical processor may be implemented by a single or multiple physical processors. Clearly a logical processor has been equated to the machine that runs a thread, and this may be the same single physical processor for multiple threads. It is therefore maintained that the multiple concurrently running processes of the references are run by "a plurality of logical processors" to the extent disclosed.

### ***Conclusion***

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

Art Unit: 2188

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary J. Portka whose telephone number is (571) 272-4211. The examiner can normally be reached on M-F 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (571) 272-4210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gary J Portka  
Primary Examiner  
Art Unit 2188

March 29, 2006



**GARY PORTKA  
PRIMARY EXAMINER**